

[7/A-6]

SARDAR PATEL UNIVERSITY
B.Sc. 3rd SEMESTER EXAMINATION
SUBJECT: MICROBIOLOGY US03EMIC01

Date: 01/10/22 FUNDAMENTALS OF MICROBIOLOGY

Total Marks: 70

Time: 12.30 to 2.30 Pm

Q-1 Attempt Multiple Choice Questions: Choose the Most Appropriate One. (10)

1. Who invented microscope?
a) Robert Koch
b) Watson and Krick
c) Antony Van Leewan hoek
d) Pasteur
2. Who invented vaccine for small pox?
a) Watson
b) Robert Koch
c) Pasteur
d) Edward Jenner
3. The first antibiotic discovered was
a) Streptomycin
b) Penicillin
c) Ampicillin
d) Erythromycin
4. Bacterial cell wall is made of-----
a) Cellulose
b) Chitin
c) Peptidoglycan
d) Agar
5. Which of the following is comma shaped?
a) Vibrio sp.
b) Bacillus sp.
c) Clostridium sp.
d) Streptococcus sp
6. Which of the following is used as decolorizer in Gram's staining?
a) Iodine
b) Alcohol
c) Safranin
d) Chloroform
7. Which type of dye can be used in positive simple staining?
a) Acidic
b) Basic
c) Neutral
d) All of these
8. Heat can act as ----- in staining procedures.
a) Intensifier
b) Fixative
c) Intensifier and fixative
d) Decolorizer
9. Nutrient agar is-----
a) Routine medium
b) Selective medium
c) Differential medium
d) not a culture medium
10. Which one of following is a selective and differential medium?
a) N- agar medium
b) E.M.B. agar medium
c) N-broth
d) none of a,b,c

Q-2 Do as directed (4+4=08)

A. Fill in the blanks (4)

1. Koch worked on----- disease (Small pox, Anthrax)
2. Cocci occurring in chain are called----- (Streptococci/ Staphylococci)
3. To observe bacteria and its structures we should use ----- (High power objective/ oil immersion objective lense)
4. Agar is obtained from ----- (algae, fungi)

B. Mention true or false

1. The field of soil microbiology was opened in the late 1800s by the Sergei Winogradsky, who showed the importance of bacteria in taking nitrogen from the atmosphere.
2. Flagella are made up of flagellin which is a polysaccharide in nature.
3. Nigrosin is an acidic dye that can be used to stain background.
4. All organisms require a source of energy. Some rely on chemical compounds for their energy and are designated as chemotrophs. Others can utilize radiant energy (light) and are called phototrophs.

Q-3 Attempt any ten (10) questions in short. (20)

1. Write postulates of Koch.
2. Who introduced Agar as solidifying agent in the field of Microbiology?
3. Enlist two Contributions of Louis Pasteur.
4. Differentiate between flagella and pili.
5. What is function of endospore for bacteria?
6. Draw a well labeled bacterial cell.
7. What is magnification of microscope?
8. What are mordants? Give examples.
9. Give two examples of Gram positive bacteria.
10. What is peptone?
11. Enlist major nutritional requirements of bacteria.
12. Name two basic dyes used in various staining procedures.

Q-4 Attempt any four in detail (4x8=32) (32)

1. Explain germ theory of diseases.
2. Explain some contemporary developments in the fields of Agriculture and Industrial Microbiology.
3. Write note on cell wall of bacteria.
4. Explain: Cytoplasmic membrane and its importance.
5. Explain: Gram's staining
6. Write a note on Compound microscope.
7. Explain: Types of media.
8. Write a note on Growth Curve of Bacteria.